An Overview of VVSG Version 2

Barbara Guttman
National Institute of Standards and Technology

NIST
National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

What is VVSG Version 2?

- The next generation of voting system standards
- More comprehensive Security requirements
- More comprehensive Human Factors requirements
- More precise and testable Core Requirements

New Organization

- Principles
- Voting Process Model
- New structure for requirements

Principles

- Discussed in March 9, 2005 plenary
- Lay out fundamental principles for voting in US

Voting Process

- VSS-2002 defined three major stages of voting:
  - Pre-voting
  - Voting
  - Post-voting
- VVSG Version 2 will contain a much more detailed process model

Structure of Requirements

- VVSG Version 2 will contain a more structured approach
- Each requirement will be numbered according to a hierarchical scheme
  - Higher level requirements are supported by lower level requirements
  - Higher level requirements may not be directly testable but can be "indirectly" tested via their lower level requirements

Build on Group 2 and Group 3 Resolutions

- January 2005 resolutions were prioritized into 3 groups

- Groups 2 & 3 were not included in VVSG Version 1

Group 2

- **Analysis of 2002 VSS**
  - *Resolutions: 25-05, 29-05*
- **Analysis of voter verifiability**
  - *Resolution: 12-05*
- **Additional requirements and test methods for human factors and accessibility**
  - *Resolutions: 2-05, 3-05, 4-05, 5-05, 6-05, 8-05, 9-05*
- **Test strategies and analysis, addressing COTS software, documentation requirements, non-conformant voting systems, and publicly available test suites and test reports**
  - *Resolutions: 14-05, 17-05, 18-05, 25-05, 26-05, 27-05, 28-05*
- **Strategy for addressing multiple representation of ballots**
  - *Resolution: 21-05*
- **Analysis of federal and consensus standards for applicability to voting**
  - *Resolution: 22-05*
- **Draft of next version of the VSS**
  - *Resolutions: 24-05, 25-05, 29-05, 33-05*

Group 3

- Usability of the Standards
  - *Resolution: 10-05*
- Common ballot format specifications
  - *Resolution: 23-05*
- Quality management standards
  - *Resolution: 30-05*
- Maintenance of the VSS
  - *Resolution: 31-05*
- Sharing information and de-qualification of voting systems
  - *Resolution: 32-05*
- Assessment papers on recommendation for future work
  - *Resolution: 34-05*

Security

- VVSG version 2 will require independent verification
- Security testing
- Incorporate federal and voluntary consensus standards

- ***Resolutions: 12-05,14-05, 17-05, 18-05, 21-05, 22-05***

Human Factors

- Move to performance standards
- Better address security and accessibility to ensure that all relevant aspects of a system are accessible.

- *Resolutions: 2-05, 3-05, 4-05, 5-05, 6-05, 8-05, 9-05*

Core Requirements

- Make requirements more precise and testable
- Standards architecture
- Profiles
- Logic verification
- Coding standards
- Abstract test suite

- *Resolutions: 14-05, 17-05, 18-05, 25-05, 26-05, 27-05, 28-05, 29-05*

Analysis of VSS-2002

- Review VSS-2002 to determine:
  - parts to retain or recast into VVSG
  - parts needing substantial change
  - missing parts (gap analysis)
- Tables on disposition of each VSS requirement (VVSG Version 2 Appendix)
- Requirements mapped to principles

- *Resolution: 25-05*

Next Steps on VVSG Version 2

- Partial first draft to show approach
- Get feedback from TGDC and from election community on work so far
- Develop additional material
- Develop testing strategies